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Deconstruction

Omega Speedmaster

Professional

Japanese Racing 3570.40, Chronograph

by

THE NAKED WATCHMAKER

Images from www.thenakedwatchmaker.com

Edition OM.1a

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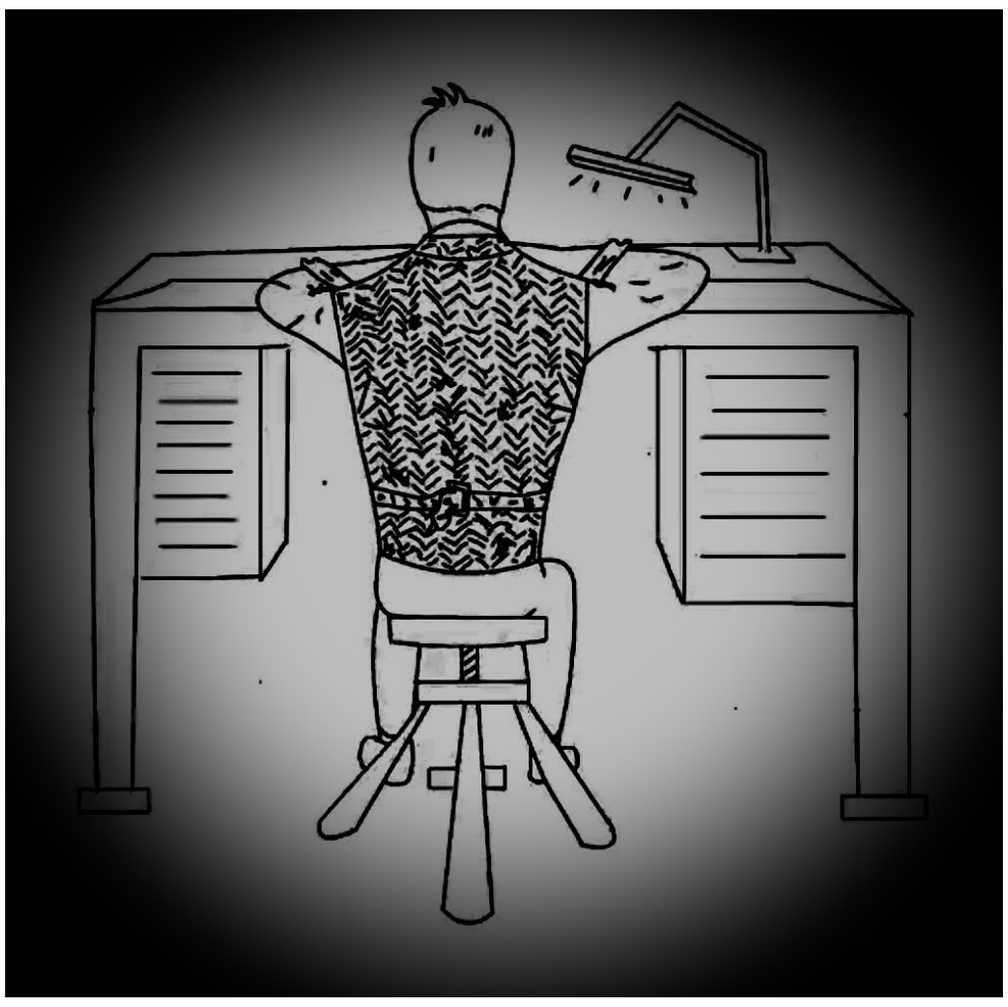


The Speedmaster is an example of an iconic design from one of the most well known of the established watch brands.

Year manufactured 2004 (Limited Edition of 2004 pieces). Stainless steel case. Dimensions: 42mm diameter, 13mm thick, perspex glass. Luminova on hands and indexes. Caliber: manual wound chronograph movement 1861. Original Omega bracelet. Lug width: 20mm.

The case back is secured using a key with 6 fingers.

Screwed on case back, machine engraved then blackened text.

Made exclusively for the Japanese market in 2004. 2004 pieces were made and delivered, but not individually numbered. They differ from the regular 3570.50 reference with special grey matte dial with red/ orange accents as well as orange hands for the chrono function. This watch is inspired from a rare grey Racing dial model delivered from 1969-1971 as well as the Speedmaster Mark II.

The movement assembly is secured in the case by the outer anti-magnetic iron cover pushing down on the calibre when the case back is screwed in place

Inner case back with references

Centre of the anti-magnetic cap which holds the movement in place.
The raised button pushes directly on the inner case back.

Views of the movement from the open case back

With the case back removed you can see the black rubber seal sitting in the case which is sandwiched between the case centre and case back, rendering the union water resistant.

The watch removed from its case

Encirlcing the movement is the movement ring which slides into the case centre.

Profile view showing the wheels driving the chronograph seconds hand.

A tachymeter scale around the rim of the watch case can be used to compute a speed based on travel time or measure distance based on speed. The spacings between the marks on the tachymeter dial are therefore proportional to 1/t where t is the elapsed time.

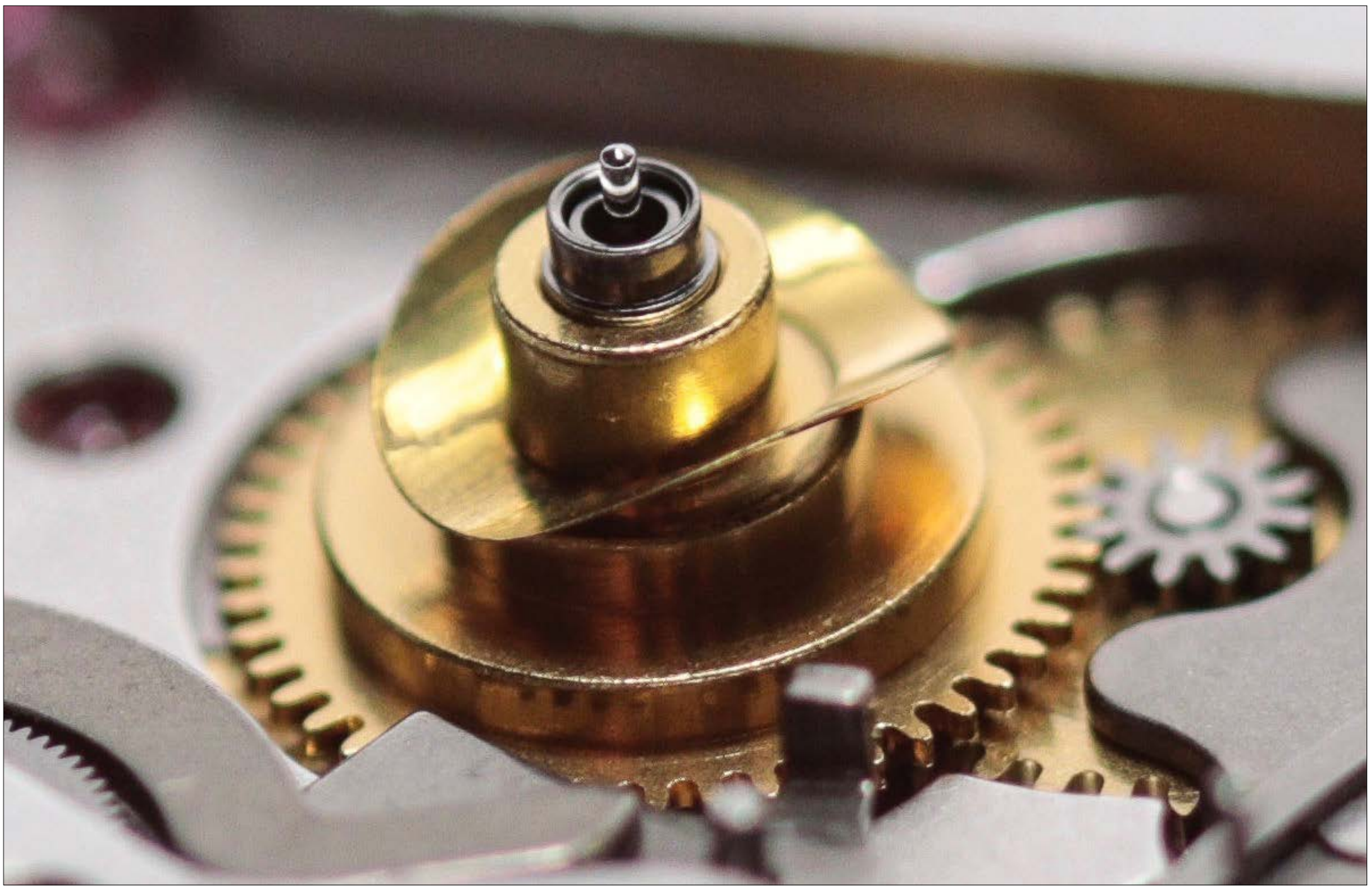
The case bezel with Tachymetric scale

Inside view of the case showing the screw held pushers tightened from the inside of the bezel

The movement ring, set between the calibre and the case centre

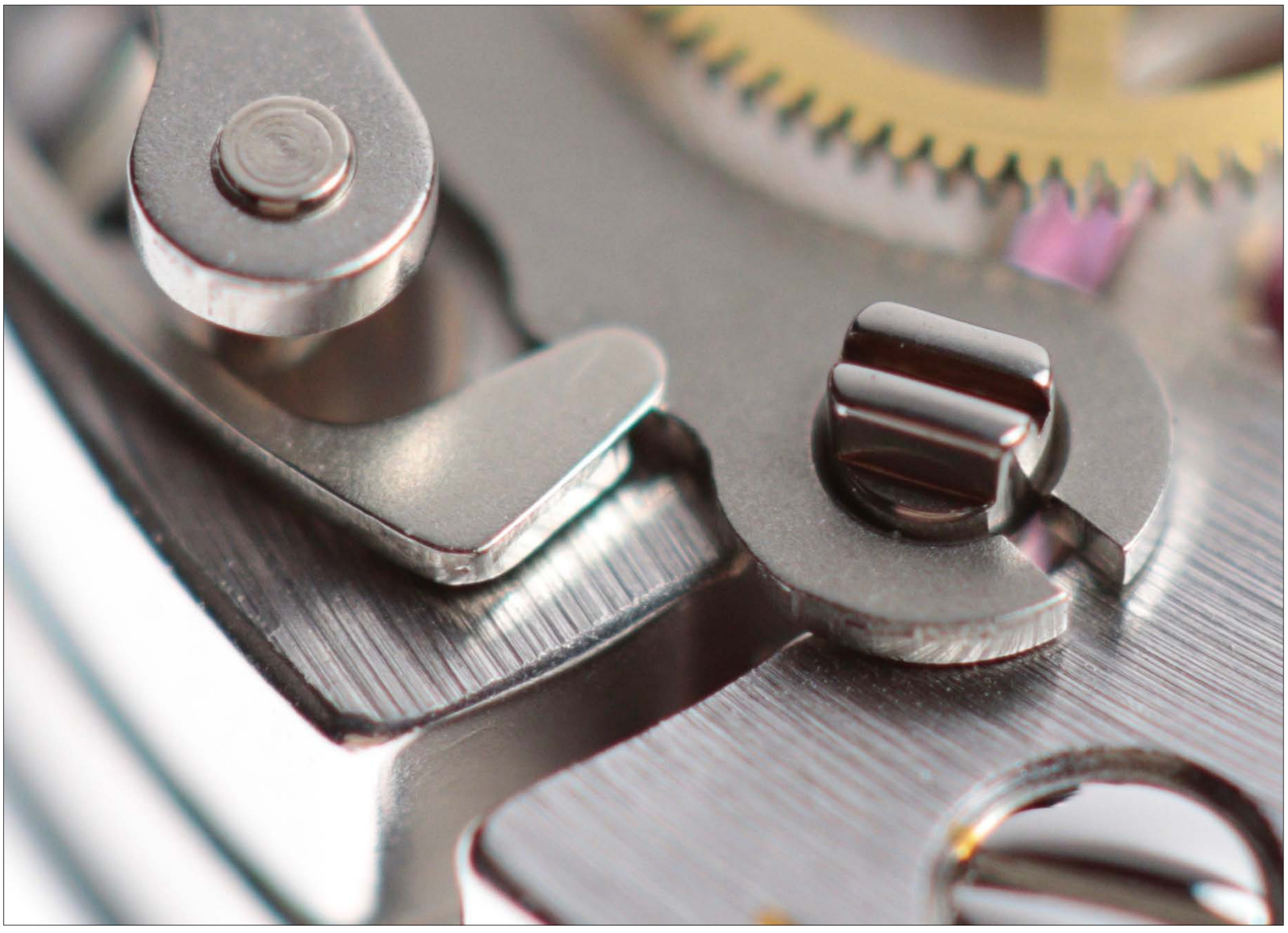
Profile of the movement showing the screw which holds in place the dial foot

Dial recto-verso



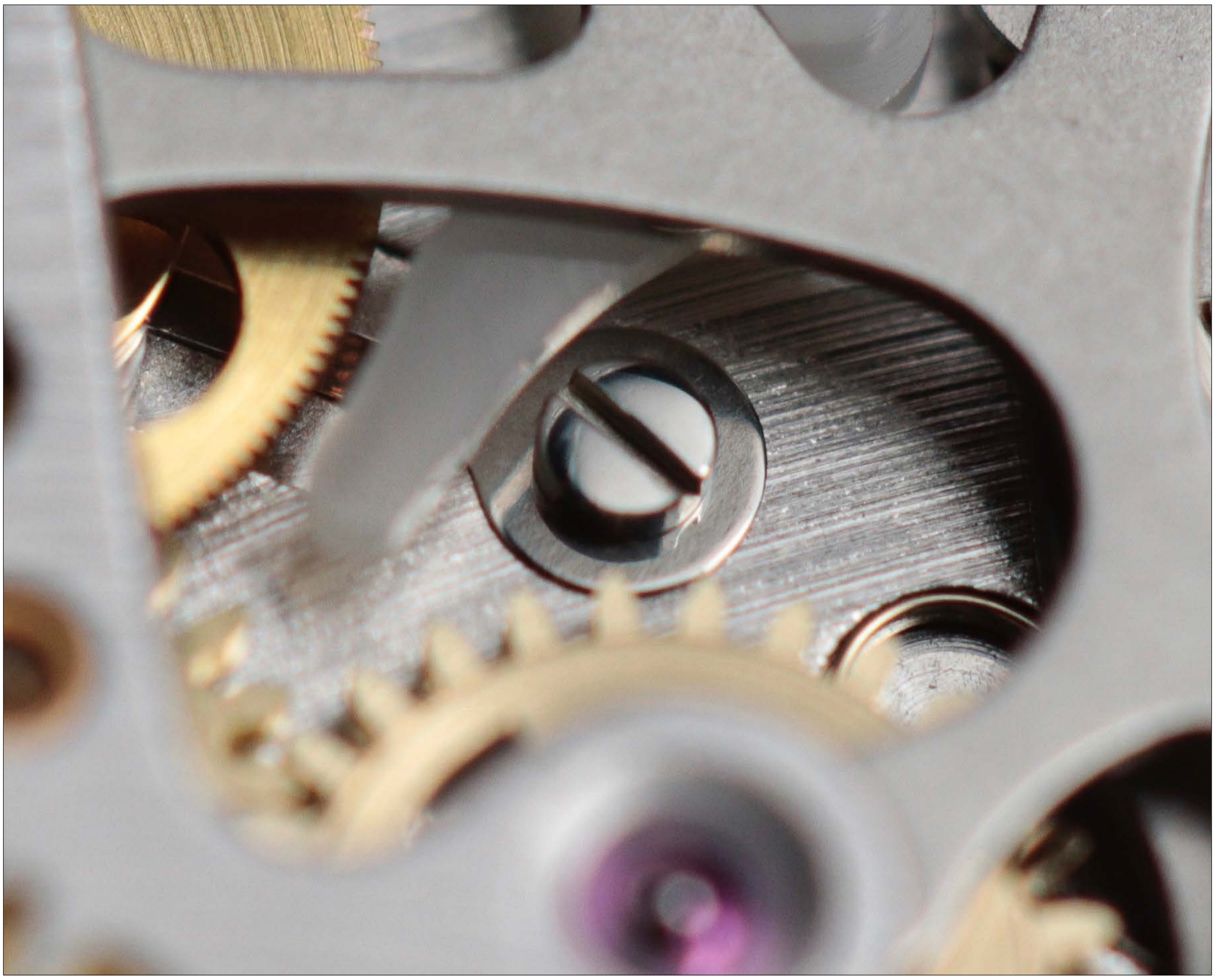
The dial washer holding the hour wheel securely in place.

The calibre Omega 1861, engraved below the balance wheel



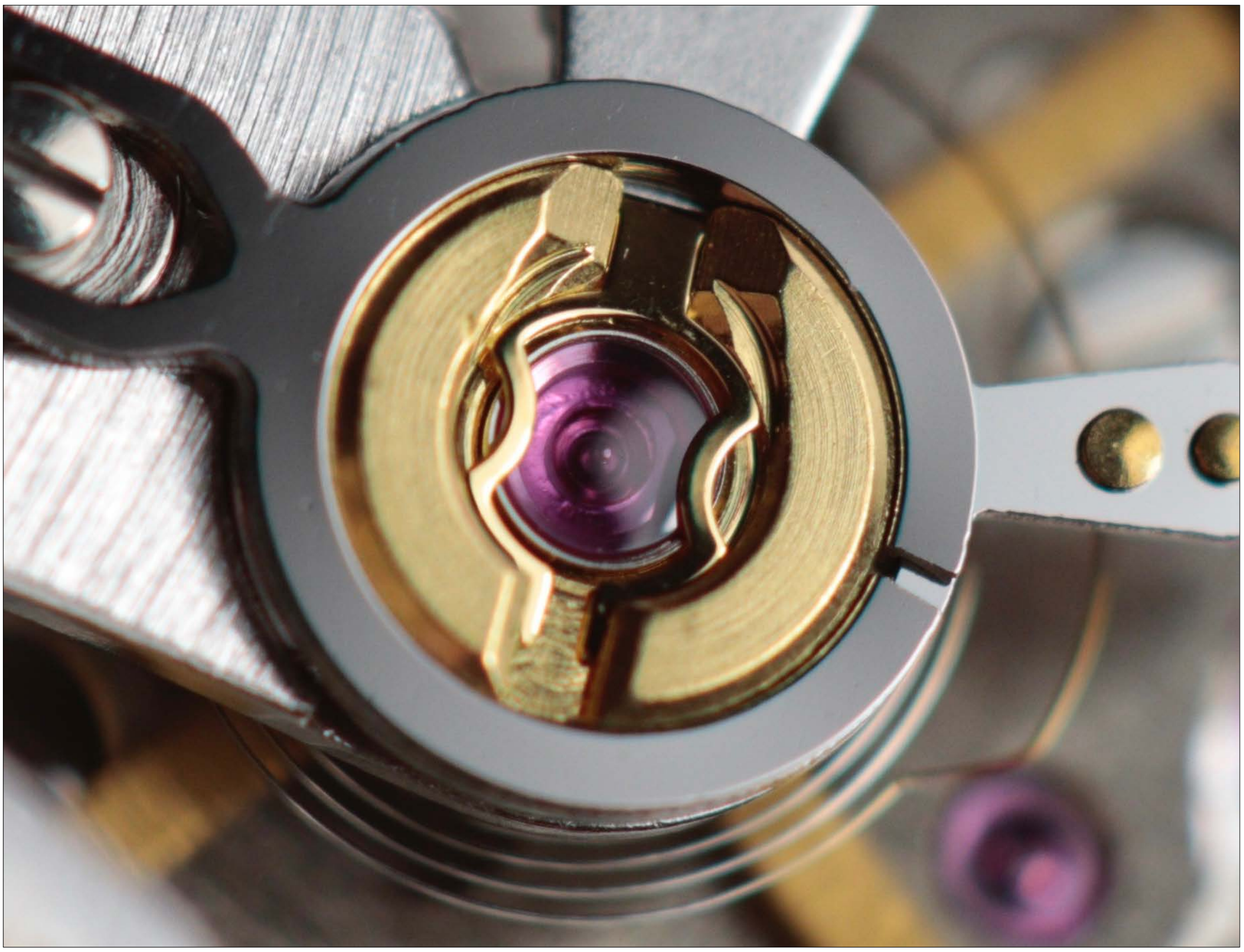
The flat side head is an eccentric which allows the coupling clutch to be adjusted altering the penetration of gears

The engraved bridge holding in place the chronograph and minute recording wheels

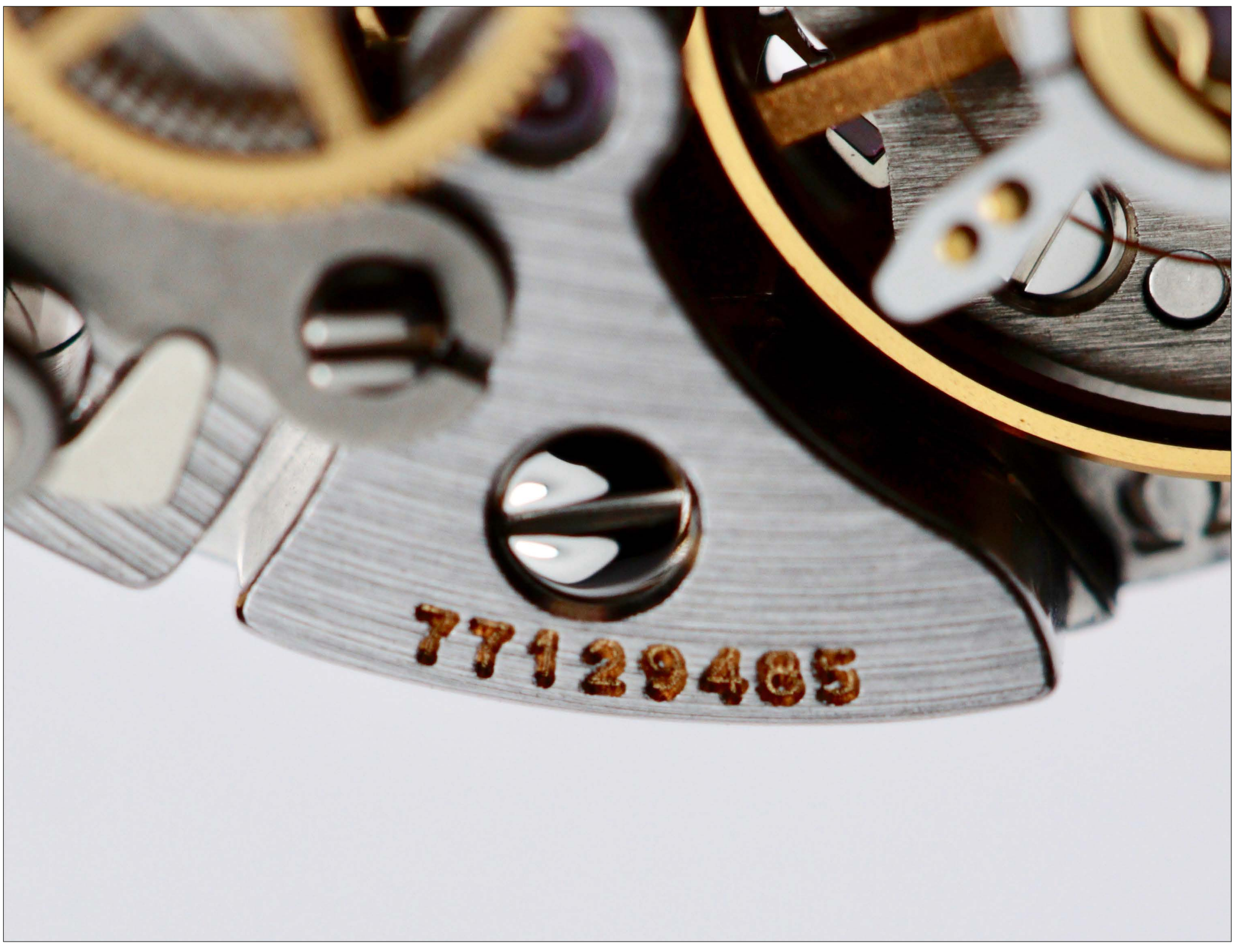


The central screw holds in place the friction spring for the chronograph wheel, removing any slack between meshed teeth gears

The controlling cam, replacing the traditional pillar wheel system

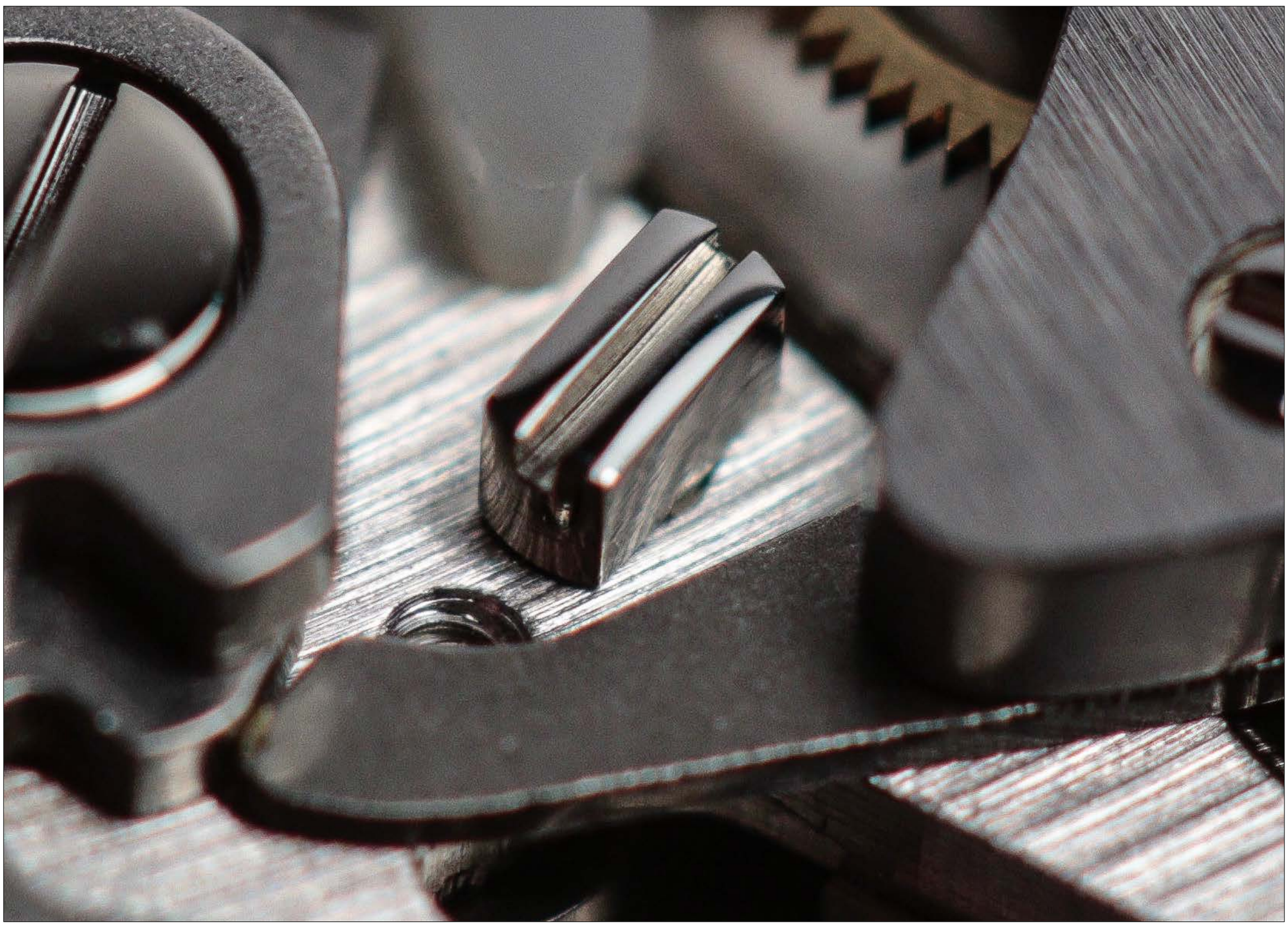


The Incabloc shock protection system protecting the balance pivots



The movement serial number

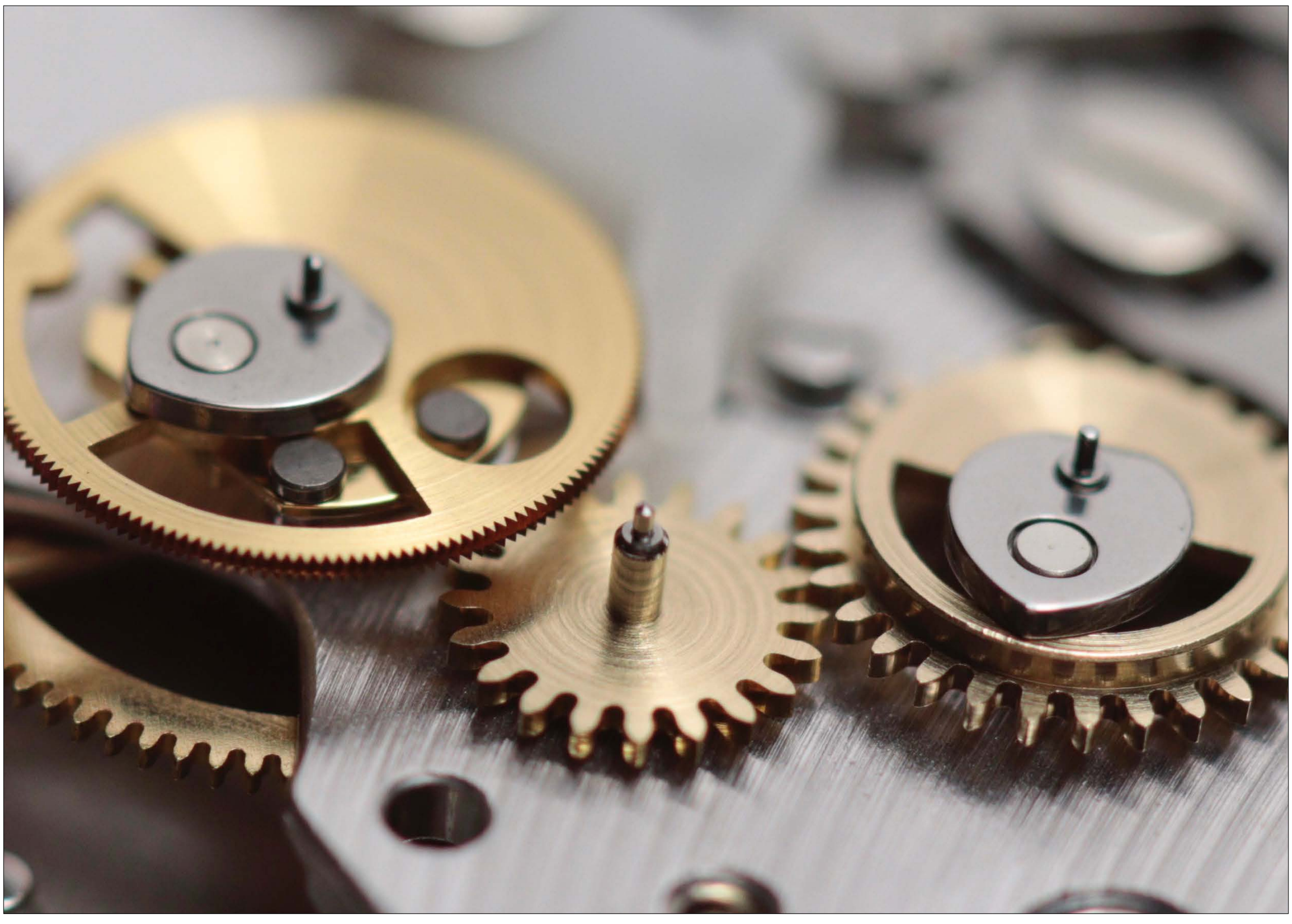
The pin hooking onto the hammers which when moved releases the hammers to return the chronograph seconds and minute recorder wheel to zero



The flat sided screw is adjusted to assure a specific penetration between the coupling clutch and the chronograph seconds wheel

The -M- shaped section on the cam assembly secures the cam system in two specific locations as the cam is adjusted between -start- and -stop- of the chronograph

Below, the first wheel on the left is the driving wheel (or upper fourth wheel) of the chronograph, in the centre is the chronograph seconds wheel which is driven by the coupling clutch (here not shown). To the right is the intermediate wheel which is indexed every minute turning the minute recorder wheel on the far right.



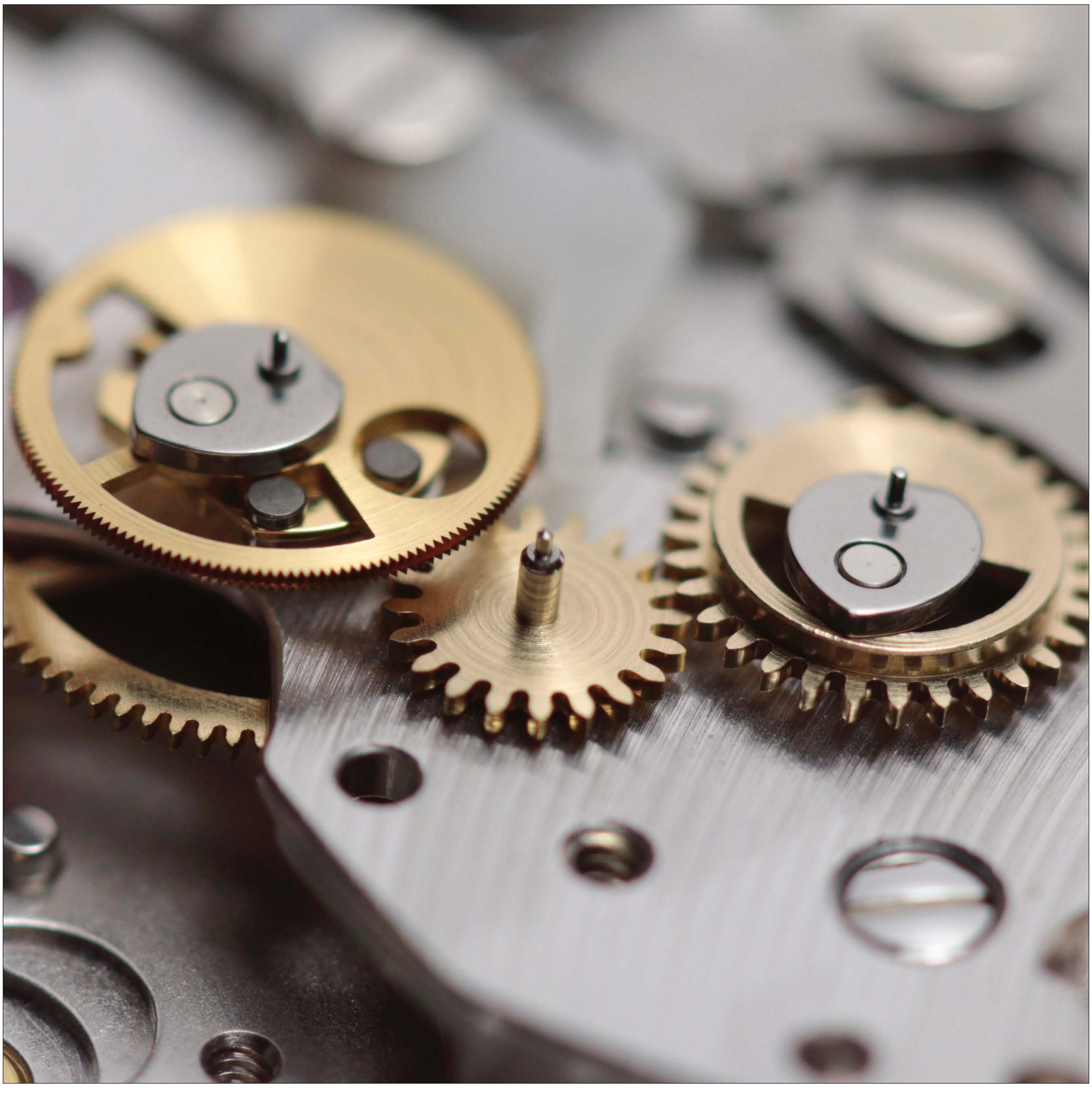
The balance and escapement removed

Coupling clutch removed

Coupling clutch

The central white lever touching the chronograph seconds wheel acts a break when the chronograph has been manual stopped.

The lower lever slides on the two shoulder screws holding it in place pushing the cam system

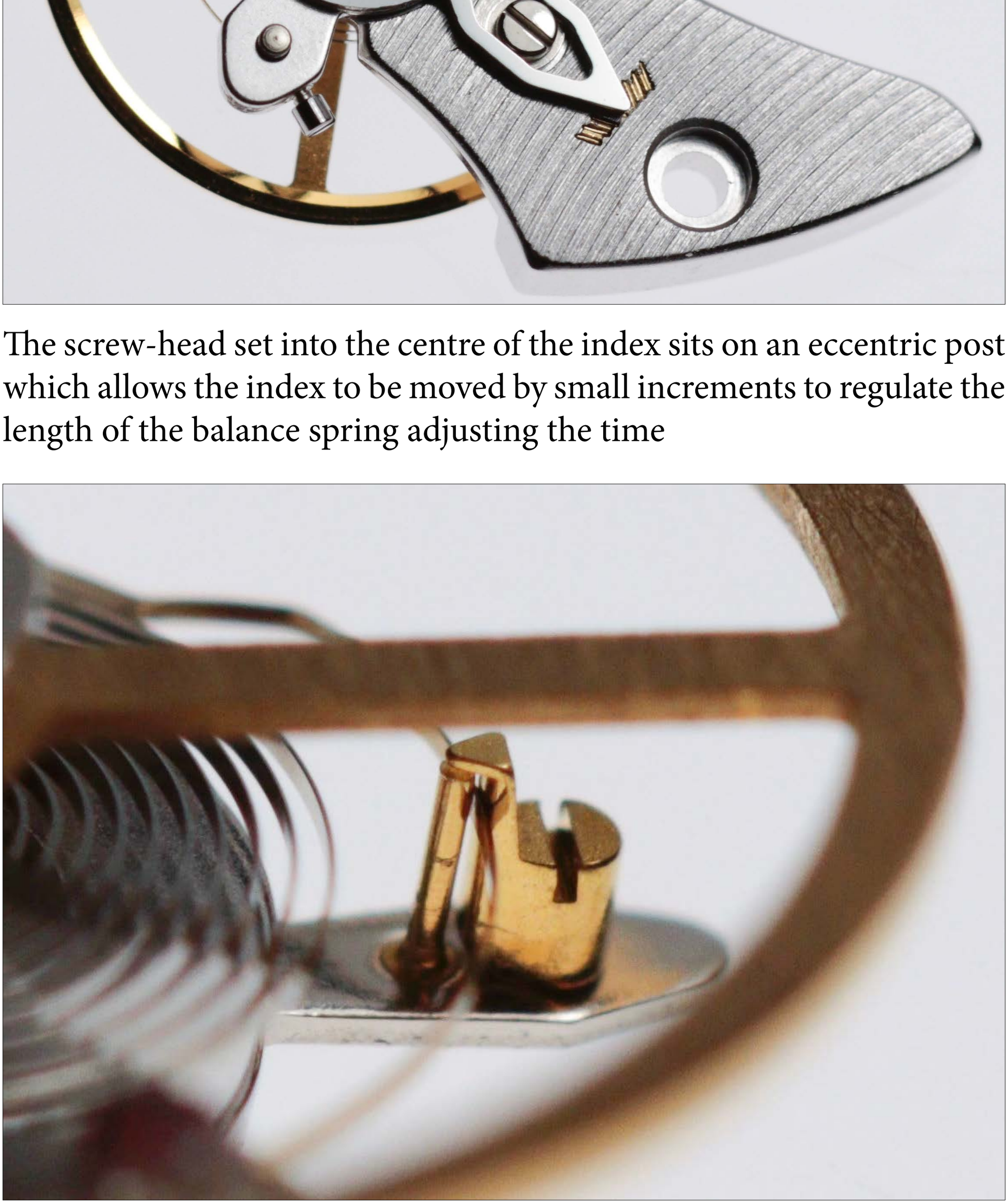


The assembly under the chronograph seconds wheel on the left meshes and indexes the intermediate pinion in the centre which then turns the minute recorder wheel on the right.

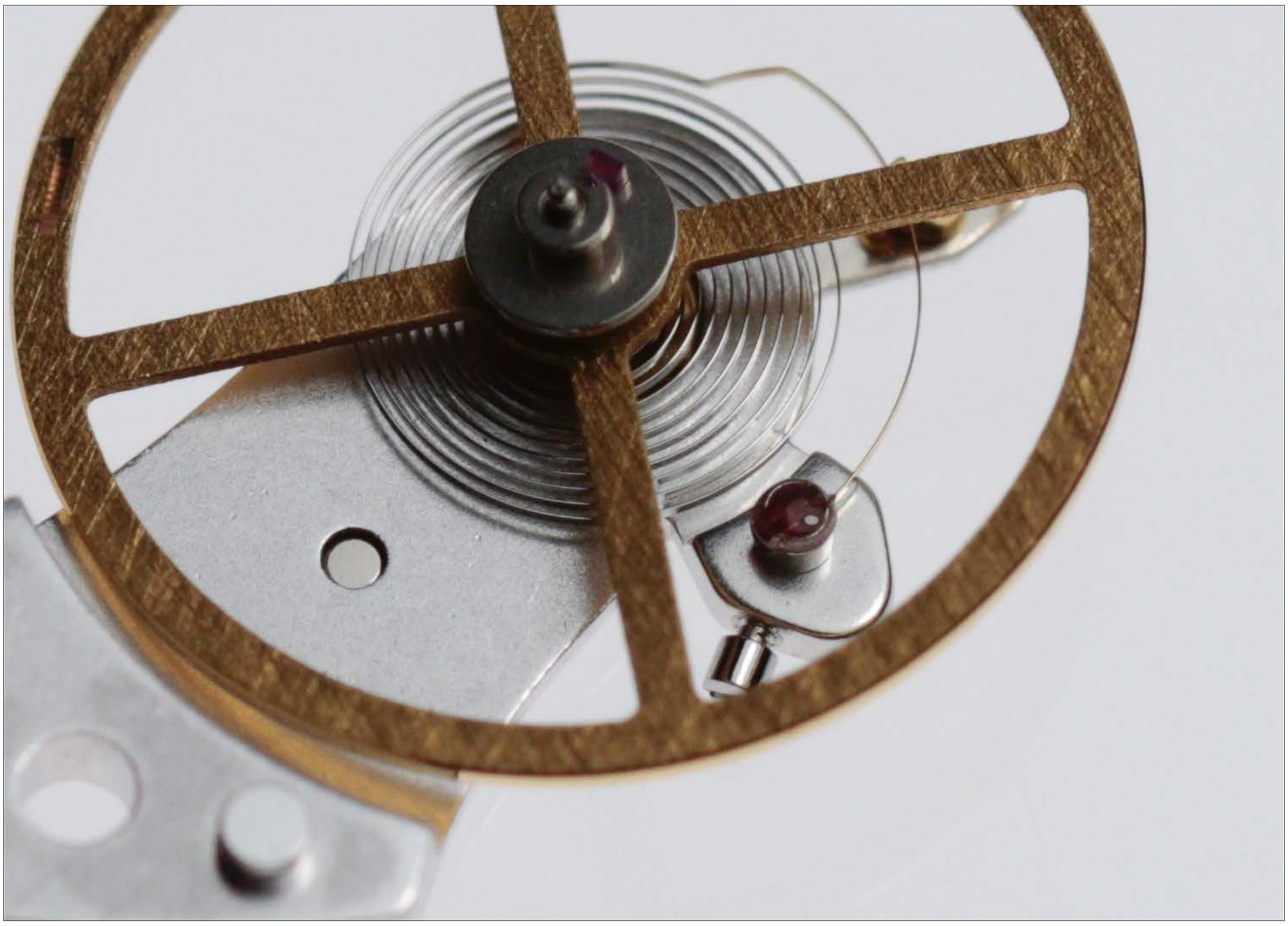
The remaining upper wheel in place on the chronograph is the upper fourth wheel which drives the chronograph. It is friction fitted onto the extended pivot of the fourth wheel, which drives the escape wheel.

The lever in the centre of the image holds down the piece underneath it which in-turn pushes against the cam system. The central lever pushes this pieces to the left to reset each time the pusher on the outside of the case is manually activated.

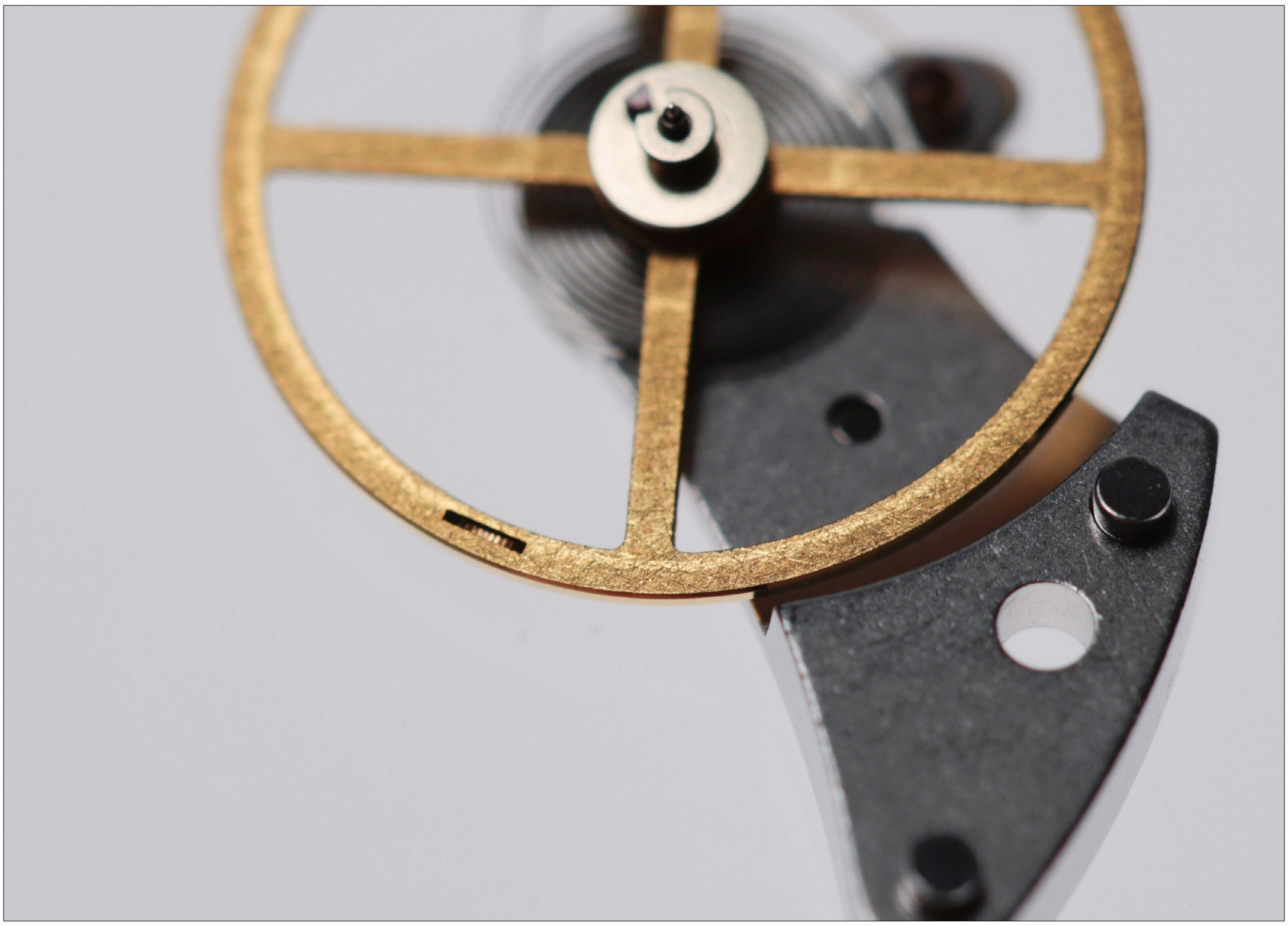
The screw-head set into the centre of the index sits on an eccentric post which allows the index to be moved by small increments to regulate the length of the balance spring adjusting the time



The balance spring sits between a regulating pin and the boot which has a small cap preventing it from jumping out in case of shocks



The balance spring is held into the stud using resin to avoid any deformation of the spring

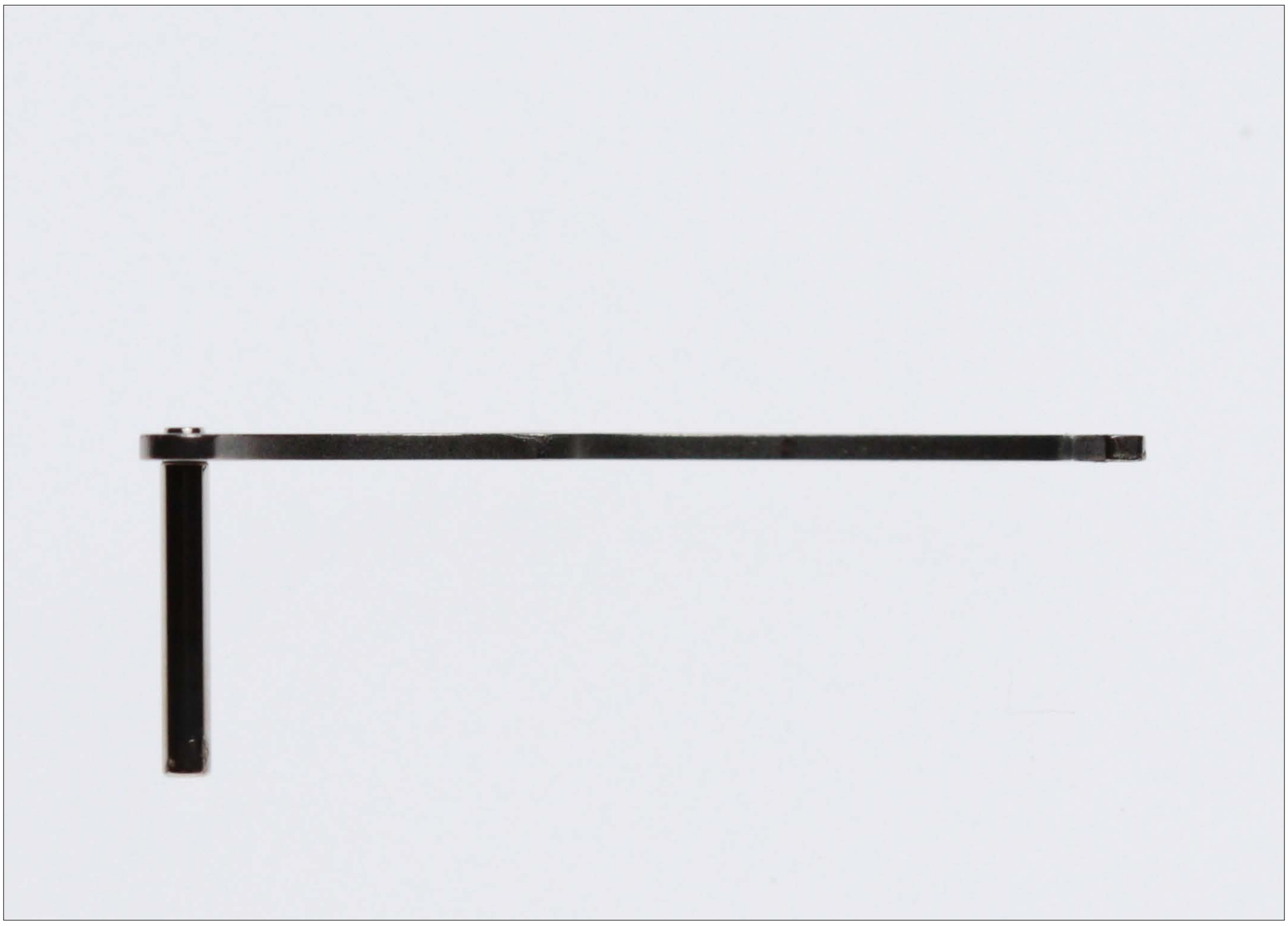


The small slot on the underside of the balance is the result of the poising of the balance

The pivots for the Swiss lever are never lubricated only the pallet jewels

The jewels are friction fitted into the lever and locked with shellac

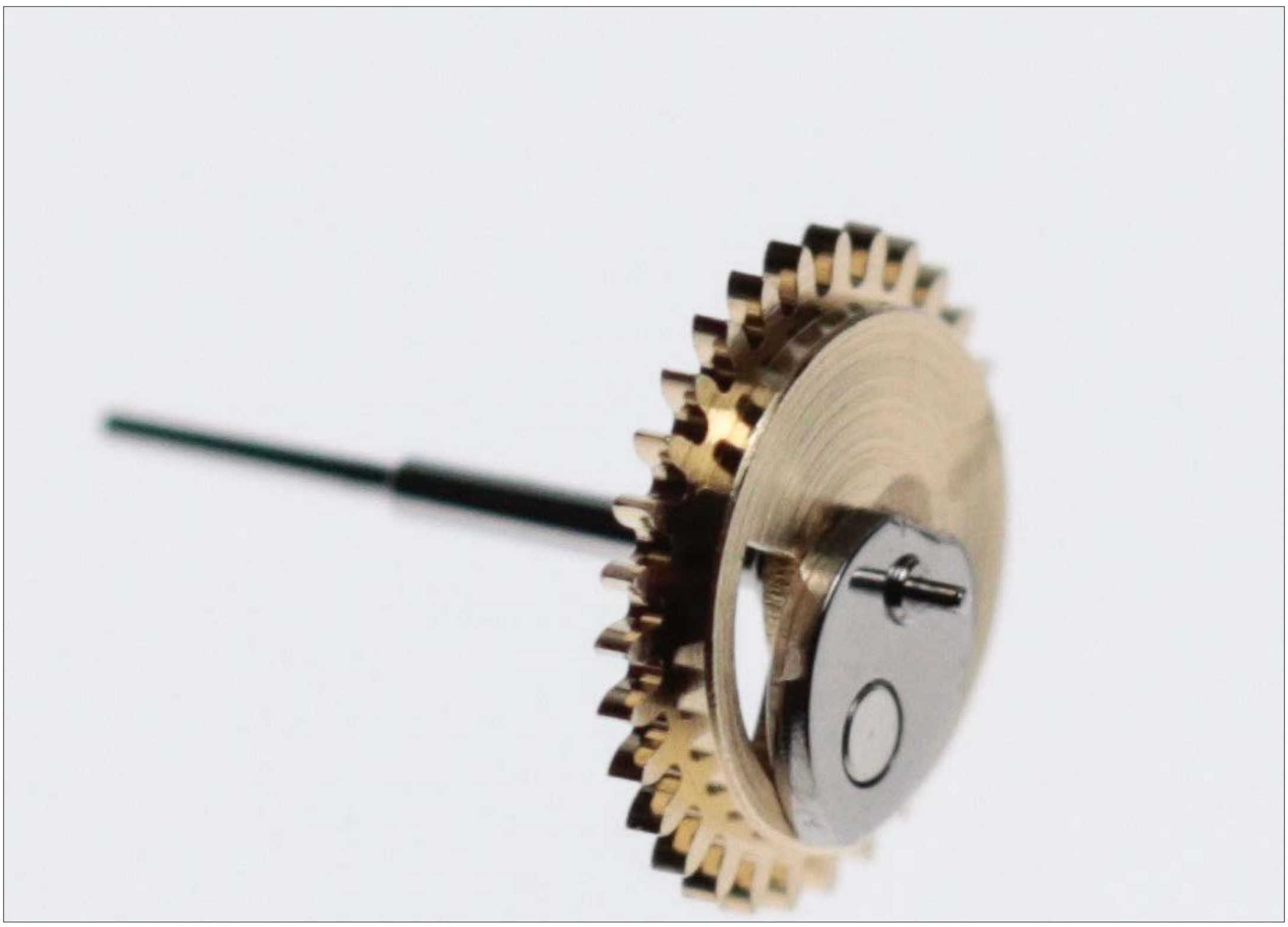
Return to zero hammers, recto-verso



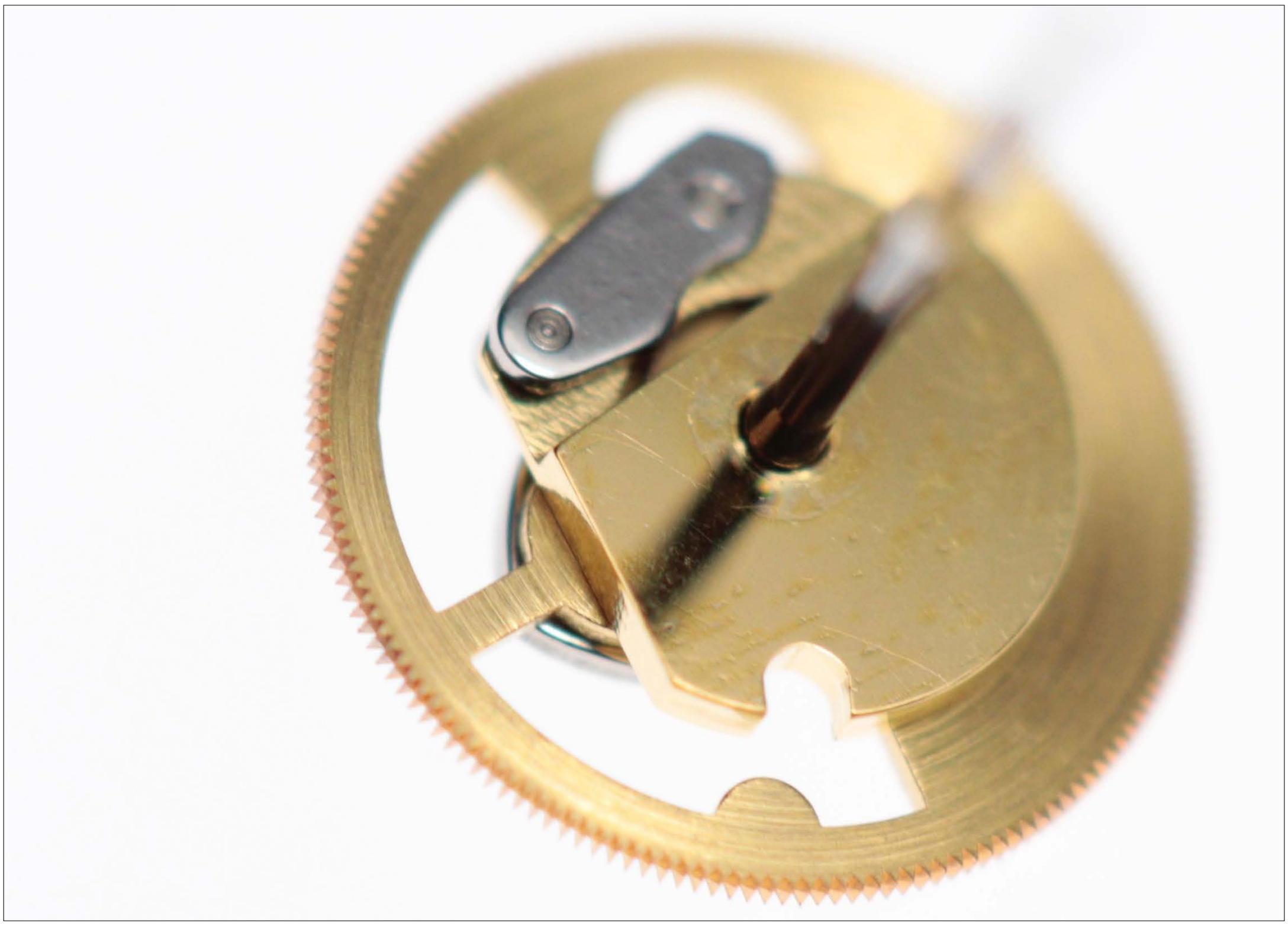
Profile of the hour recorder operating lever

The hour recorder operating lever

Minute recorder wheel with its heart shaped cam for returning to zero though application of the hammers



Minute recorder wheel, showing the length of its axel which traverse the movement finishing flush with the dial



Underside of the chronograph seconds wheel showing the assembly that turns the intermediate pinion indexing the minute recorder

The triangular teeth profile of the chronograph wheel

The seconds chronograph wheel, the skeletonized section of the wheel allows visibility when the watch is being set up and adjusted

The spring which pushes against the hammers

The coupling clutch linking the movement to the chronograph wheel when the chronograph is activated

Underside of the coupling clutch showing the eccentric

The coupling clutch spring underside view

The chronograph wheel bridge

Underside of the chronograph wheel bridge with the indexing pawl and spring assembled

Diverse views of the assembled watch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